

CLAIMS

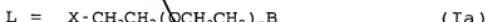
Sub B 1

1. A method for removing water from surfaces of various materials, comprising the steps of covering said surface with a composition having a specific weight higher than that of the water and subsequently removing water from the composition by skimming, wherein a composition essentially consisting of the following components is used:

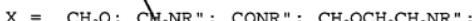
A) a non ionic additive having a fluoropolyether structure with a fluorinated T end group containing one chlorine atom, having the following formula:



wherein



wherein:



with $R'' = H; C_{1-3}$ alkyl,

T is a fluorinated radical selected from



Y = CF₃ or F,

the radical R₁ being of (per)fluoropolyether type;

being in said additive of formula (I):

- the number average molecular weight of the

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fluoroether part $T-OR_f$ in the range 400-2,000,

the ratio by weight (K) between the fluorinated part and the hydrogenated L part of the additive is in the range 1.50-4.00; the n parameter in formula (Ia) being such as to meet said ratio;

B) a perfluoropolyether having number average molecular weight in the range 300-900, the ratio K^i between the number average molecular weight of the fluoro-polyether part $T-OR_f$ of the additive and the number average molecular weight of component B) being higher than 1.60.

2. A method according to claim 1, wherein the number average molecular weight of the fluoroether part $T-OR_f$ of the compounds of formula (I) component A) is preferably in the range 500-1,200, still more preferably in the range 600-1,000.

3. A method according to claims 1-2, wherein the perfluoropolyether component B) has number average molecular weight preferably in the range 300-650.

4. A method according to claims 1-3, wherein the radical R_f of fluoropolyether type preferably comprises repeating units statistically distributed along the polymer chain

selected from: (CF_2CF_2O) , $(CFYO)$ wherein Y is equal to F or CF_3 , (C_3F_6O) ; $(CF_2(CF_2)_zO)$ wherein z is an integer equal to 2 or 3; $(CF_2CF(OR_f.)O)$, $(CF(OR_f.)O)$ wherein $R_f.$ is equal to $-CF_3$, $-C_2F_5$, $-C_3F_7$; $CR_4R_5CF_2CF_2O$ wherein R_4 and R_5 are equal to or different from each other and selected between Cl or perfluoroalkyl, preferably having 1-4 carbon atoms.

5. A method according to claim 4, wherein the group $R_f.$ comprises the following repeating units:

(a) $-(CF_2CF(CF_3)O)_a(CFYO)_b-$

wherein Y is F or CF_3 ; a and b are integers such that the molecular weight is in the above range; a/b is in the range 10-100;

(b) $-(CF_2CF_2O)_c(CF_2O)_d(CF_2(CF_2)_zO)_h-$

wherein c, d and h are integers such that the molecular weight is within the above range; c/d is in the range 0.1-10; h/(c+d) is in the range 0-0.05, z has the above value, h can be equal to 0;

(c) $-(CF_2CF(CF_3)O)_e(CF_2CF_2O)_f(CFYO)_g-$

wherein Y is F or CF_3 ; e, f, g are integers such that the molecular weight is within the above range; e/(f+g) is in the range 0.1-10, f/g is in the range 2-10;

(d) $-(CF_2O)_j(CF_2CF(OR_f.)O)_k(CF(OR_f.)O)_l-$

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wherein: R_f is $-CF_3$, $-C_2F_5$, $-C_3F_7$; j, k, l are integers such that the molecular weight is within the above range; $k+l$ and $j+k+l$ are at least equal to 2, $k/(j+l)$ is in the range 0.01-1,000, $1/j$ is in the range 0.01-100;

(e) $-(CF_2(CF_2)_zO)_s-$

wherein s is an integer such as to give the above molecular weight, z has the already defined meaning;

(f) $-(CR_4R_5CF_2CF_2O)_j-$

wherein R_4 and R_5 are equal to or different from each other and selected from H, Cl or perfluoroalkyl, having 1-4 carbon atoms, j' being an integer such that the molecular weight is the above one;

(g) $-(CF(CF_3)CF_2O)_j-$

j'' being an integer such to give the above molecular weight.

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B4*

6. A method according to claims 1-5, wherein the value K^I is higher than 2.00 and preferably in the range 2.00-3.00.
7. A method according to claims 1-6, wherein the perfluoro-polyether component B) preferably has the following structure:



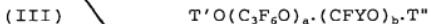
wherein:

R_f has the above meaning;

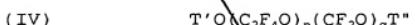
~~T' and T", equal to or different, are selected from -CF₃,~~
~~-C₂F₅, -C₃F₇.~~

SM 83

8. A method according to claim 7, wherein the perfluoropolyether component B) has a structure selected from the following:



wherein Y = F or CF₃, a" and b" are integers such that the molecular weight is within the range with a"/b" in the range 1-40; T' and T" are as above defined.



wherein p and q are integers such that the molecular weight is within the indicated range with p/q in the range 0.6-1.2; T' and T" are as above.



wherein s' is an integer such that the molecular weight is within the indicated range; T' and T" are as above.

SM 83

9. A method according to claims 1-8, wherein the amount of additive A) in the compositions is lower than or equal to 0.1% by weight, preferably lower than 0.05% with respect to the total weight of the composition.

10. A composition according to claims 1-9.

11. Non ionic additive having a fluoropolyether structure

according to claims 1-9.

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